# MaxCube II User
# Setup and Maintenance Guide

**Rugged Portable Computers, LLC**
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## Regulatory Approvals

EN60950, EN55024, EN55022, FCC, Part 15, EN61000-3-2 & EN61000-3-3.

## Warnings

Changes or modifications to this device that are not approved by the party responsible for compliance could void the user's authority to operate the equipment.

To reduce the risk of electrical shock, do not attempt to open the device unless instructed to do so. Do not use any tool for purposes other than instructed.

A Lithium Ion battery is included with the system motherboard. This battery is used for the Real Time Clock (RTC) circuit. The expected lifetime of the battery is approximately 5 years. There is a danger of explosion if this battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the motherboard manufacturer. Dispose of used batteries according to the manufacturer's instructions.

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# Chapter 1: Quick Start Setup

# Documentation Conventions

## Icons

- The information icon is used to annotate important information.

- The exclamation icon is used to annotate cautionary information.

## Fonts

- *Italics* font is used for emphasis, book titles, commands, and path and file names.
- **Bold** may be used to emphasize text, highlight menu items, and denote the titles of dialog boxes.
- **Menu > Command** identifies the path used to select a menu command.
- `Courier` font is used for program listings and for any text messages that the software displays on the screen.
- **Note:** describes important information, warnings, or unique commands.
- “Select” means click the left mouse button on the indicated item.
- “Click-left” (or just “click”) means click the left mouse button on the indicated item.
- “Click-middle” means click the middle mouse button on the indicated item.
- “Click-right” means click the right mouse button on the indicated item.
- “Double-click” means click twice consecutively with the left mouse button.
- “Drag-left” (or just “drag”) means press and hold the left mouse button on the indicated item, then move the cursor (pointer) to the destination and release the button.
- “Shift-click-left” means press and hold the <Shift> key then click the left mouse button on the indicated item.
- “Ctrl-click-left” means press and hold the <Ctrl> key then click the left mouse button on the indicated item.

# Inspecting the Shipment

MaxCube systems are packaged to withstand the roughest of treatment during shipping. Any boxes, foam core padding, and anti-static bags should be stored safely away in case you need to ship the system for any reason in the future. Inspect the containers the system arrived in. If there is any unusual damage to the containers, make note of the damage on the delivery form and contact MaxVision support (see *Appendix D for more details*).

# Unpacking the MaxCube

**Note:** MaxCube systems are always shipped in an associated Pelican case. The Pelican/MaxCube combination weighs approximately 70 lbs (more with display and netpac options). If you are unable to lift this weight safely, you should obtain assistance in unpacking and moving the system.

1) Clear an area on a desk or table on which to place your MaxCube system.
2) Place the Pelican case containing the MaxCube system on the floor near the desk or table.
3) Remove the packing slip from the outside of the Pelican case and save it for later use as discussed below.
4) Open the six latches securing the lid of the Pelican case as illustrated in Figure 1-1

**Figure 1-1**

**Figure 1-2**

5) Keeping your back straight, bending at the knees, and using your legs as much as possible, carefully slide the MaxCube out of the case with the assistance of the handles on the sides as illustrated in Figure 1-2 and place the system on the table.
6) Observe the area to the right of the unit compartments that contains the wheels as illustrated in Figure 1-3. Set the wheels aside. Open the flap under the wheels to retrieve documentation and software as illustrated in Figure 1-4.

**Figure 1-3**

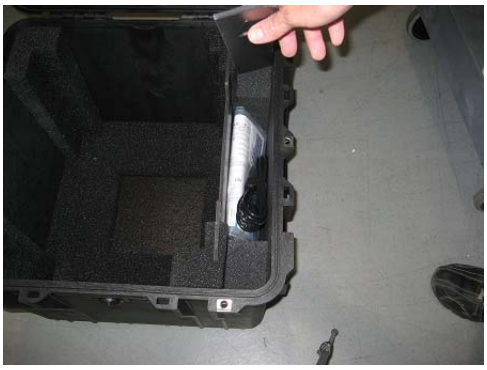


**Figure 1-4**

7) Observe the documentation pack, AC power and DC input cable (only needed if powered off of DC power) in Figure 1-5.

**Figure 1-5**

8) Close the lid, and invert the Pelican case such that it is resting on its lid as illustrated in Figure 1-6.

9) Attach the four wheels as illustrated in Figures 1-7.

**Figure 1-6**

**Figure 1-7**

**Figure 1-8**

10) When transporting the system in the future, you can use the Pelican case's collapsible handle to pull the case around (as illustrated in Figure 1-8).

**Note:** In order to avoid damaging the Pelican case, you must detach and re-store the wheels in the case before shipping the MaxCube (see Figures 1-3 and 1-4).

## Check the Packing List and Confirm Documentation

1) Check the packing slip to ensure that everything is as you expect with regard to the main system. Pay particular attention to any special options you may have requested, such as number of disk drives, memory upgrades, and custom graphics subsystems.
2) Check the contents of the envelope containing the documentation associated with your system. – a basic MacCube documentation pack will include:
   - Windows® license and CD-ROM.
   - Motherboard manual.
   - Recovery DVD.

# Setting-Up the MaxCube

## Location

Your MaxCube system needs to be positioned in a location with the capacity to safely support at least 54 lbs. The unit should be unobstructed so as to permit the free flow of cooling air in through the intake filter and out via the exhaust vents.

## Cable Connections

1) The MaxCube in this document includes both the optional display/keyboard assembly and the Netpac base with 16port GbE switch and Cisco Security Appliance. The cables associated with these devices are shipped unplugged and bound together with a Velcro strap as illustrated in Figure 1-9.

**Figure 1-9**

2) AC power input for the Netpac base is provided via the AC plug shown being connected in Figure 1-10.

**Figure 1-10**

3) The DC power for the Netpac base is shown being connected in Figure 1-11. Notice the keying of this connector.

**Figure 1-11**

4) Usually the keyboard USB is connected to the port illustrated in Figure 1-12. Do not change the keyboard USB connection without first shutting down the MaxCube.

**Figure 1-12**

5) The network connection to the MaxCube motherboard is illustrated in Figure 1-14. Either port could be used. The optional Netpac base may also be used for the connection to your main network.

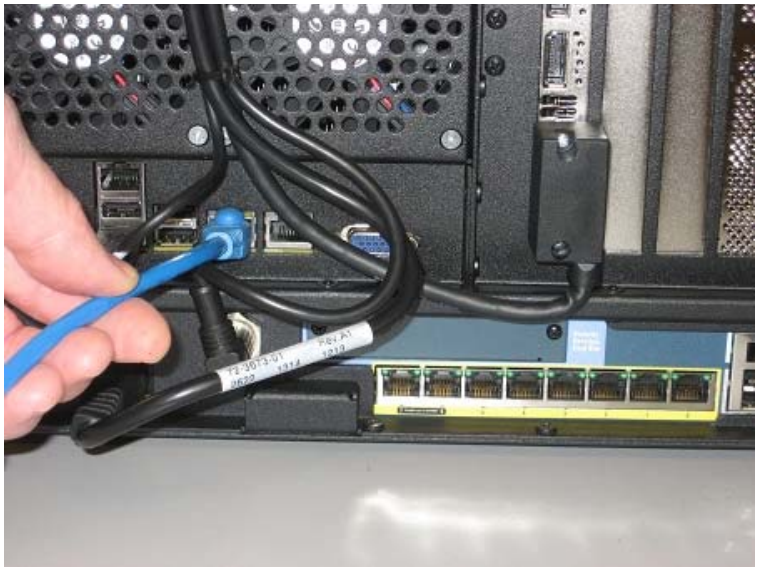


**Figure 1-13**

6) Figure 1-14 shows the optional DC power input. Figure 1-15 shows the standard AC power input.

**Figure 1-14**

**Figure 1-15**

**Note:** The AC power out connector (blue round connector shown in Figure 1-15) is primarily intended for use with a NetPac™ or TeraPac 3 unit. This connector provides the TeraPac 3 or NetPac with an uninterrupted power source via the optional MaxCube internal UPS unit. If required, you may use this connector to power a low-demand unit such as an external USB-based drive, for example. However, under no circumstances should you use this connector to power any high-demand equipment.

MaxCube systems can be powered from AC or DC sources (optional). In the case of an AC source, the MaxCube's power supply is an auto-sensing 100 to 240 VAC, 50 to 60 Hz unit. In the case of a DC source, the MaxCube's power supply is an auto-sensing 20 to 32 VDC unit (80A inrush and 30A

nominal at 28V). Ensure that the supplied power is sufficient, stable, and without spikes or surges for operation of your MaxCube and other required equipment.

## Opening the Display

1) The optional display is not latched; instead it is held securely by a friction hinge. In order to deploy the display, gently lift it into the vertical position as illustrated in Figures 1-16 and 1-17. Observe the integrated rugged keyboard.

**Figure 1-16**

**Figure 1-17**

# Powering-Up Your MaxCube

1) Press and release the soft power switch as illustrated in Figure 1-18.

**Figure 1-18**

**Figure 1-19**

2) Due to extensive system initialization and verification checks, the BIOS boot-up process can take a significant amount of time, especially in the case of systems with large amounts of memory. In the case of a system containing 12 GB of RAM, for example, it can take 60 seconds before all three LEDs above the numerical keypad on the keyboard flash to indicate that the system is at a point where information should start to appear on the main display.

**Note:** If nothing appears on the main display, the fact that the three LEDs flash on the keyboard indicate that the system is alive.

# “Dos and Don’ts”

1) Always disconnect the external power source (AC or DC depending in your environment) when removing or installing system components.

2) In the case of extreme dust conditions, it is imperative that you use (and maintain) the oil-based "Filter" supplied with your system (see also the discussions on maintaining this filter as presented later in this manual).

# Setting-Up the Graphics

When you receive your MaxCube system, you will find that the graphics subsystem has been pre-installed with the following (recommended) characteristics:

- **Color Quality:** Highest (32-bit)
- **Resolution:** 1280 x 800 (assuming an optional 13.3” display)

Irrespective of the configuration, the graphics on your system will have been custom pre-configured to suite your particular requirements.

If you wish to modify these settings, right-mouse-click in an empty area of the desktop, select the **Properties** item from the resulting pop-up menu, select the **Settings** tab, and then vary the **Color quality** and **Screen resolution** values as required.

MaxCube systems are available with a variety of different graphics cards depending on your unique application(s). The standard configuration employs a PCI Express-based NVIDIA Quadro family board.

If you do have a special graphics card, you should consult the manual associated with this card (this manual will be included in your documentation package as discussed in *Chapter 1*) or contact MaxVision support (as discussed in *Appendix D*) for more information.

# Adjusting the Display

Look carefully at the controls shown in Figure 1-20. Observe the power button located to the right of the power light-emitting diode (LED). This is an independent power button for the display.

Pressing the **MENU** button will bring up a series of items on the screen. Use the up/down buttons to move between these items; press and release the **SEL** button to select that item; use the up/down buttons again to vary the settings; and press and release **SEL** button to accept the new settings. When you are finished, press the **MENU** button to exit the menu system.

**Figure 1-20**

# Chapter 2: Handling Removable Media

# Introduction

The MaxCube is ideal for high-security environments in which it is required to be able to remove and securely store sensitive data; the two system drives (which can be configured as a redundant / mirrored RAID 1 array if required) and eight-data-drive magazine are removable.

Also, the removable nature of the eight-data-drive magazine makes the MaxCube an ideal system for high-definition (HD) video recording and editing applications.

# Removing and Storing the System Drives

1) Open the optional display screen (if present) and then gently pull the front air intake grill away from the system as illustrated in Figure 2-1.

**Figure 2-1**

**Figure 2-2**

2) In order to remove the system set, unscrew the captured screws as illustrated in Figure 2-2 and then pull the disk away from the system as illustrated in Figure 2-3.

**Figure 2-3**

# Removing and Storing the Data-Drive Magazine

1) Open the optional display screen (if present) and then gently pull the front air intake grill away from the system as illustrated in Figure 2-4.

**Figure 2-4**

**Figure 2-5**

2) Observe the two spring-loaded release latches at either end of the data-drive magazine's quick-release locking bar as shown in Figure 2-5 (the right-hand release latch is located just to the right of the fingers in this illustration. In order to remove the eight-disk data-drive magazine, pull these spring latches toward the center of the quick-release locking bar, lift the bar as illustrated in Figure 2-6, and pull the magazine away from the system as illustrated in Figure 2-7.

**Figure 2-6**

**Figure 2-7**

3) When the locking bar has cleared the system, take a firm hold of the magazine as illustrated in Figure 2-7 and fully remove it from the system.

4) Store the magazine in a secure location.

**Note:** As opposed to an 8-disk data-drive magazine, your system may be configured with one or two 4-disk magazines; one, two, three, or four 2-disk magazines; or one 4-disk magazine combined with one or two 2-disk magazines.

5) A similar process is used to remove the optical drive. Unscrew the captured screws (these are *not* thumbscrews, so a screwdriver is normally required for field replacement of the optical drive) as illustrated in Figure 2-8 and 2-9.

**Figure 2-8**

**Figure 2-9**

# Chapter 3: Module Replacement/Upgrade Procedures

# Introduction

The instructions in this chapter describe how to replace and upgrade various modules in your MaxCube II system.

**Note:** Generally speaking, you should only access the MaxCube internals under the direction of MaxVision support. In some cases, performing unauthorized procedures or using components that have not been tested and approved by MaxVision may invalidate your warranty.

**Note:** Power-down your MaxCube system (shut down Windows®) and then remove the power cable before performing any of the procedures discussed in this chapter. Also please be aware of static discharge when working on your MaxCube. Ideally you should be wearing a properly grounded static strap; failing this, make sure to touch the metal part of the chassis to discharge any static prior to handling any delicate electronic parts.

**Note:** When accessing the system internals and/or performing module upgrade procedures, you are quickly going to end up with a lot of screws and other small items. In order to keep track of things and to prevent misplacing any parts, it is strongly recommended to have a plastic container divided into small compartments and to label these compartments as you work.

# Required Tools and Techniques

Most of the module replacement and upgrade procedures discussed in this chapter can be performed using only a pair of #1 (small tip) and #2 (regular tip) Phillips screwdrivers. However, some procedures will require additional tools as discussed in *Appendix C*.

**Note:** It is extremely important that you use only high-quality tools so as to avoid any slippage and stripping of screw heads and threads. Furthermore, in order to avoid any slippage, it is VERY important to apply adequate force in the form of **firm and steady pressure**. See *Appendix C* for details on the tools required to service the system.

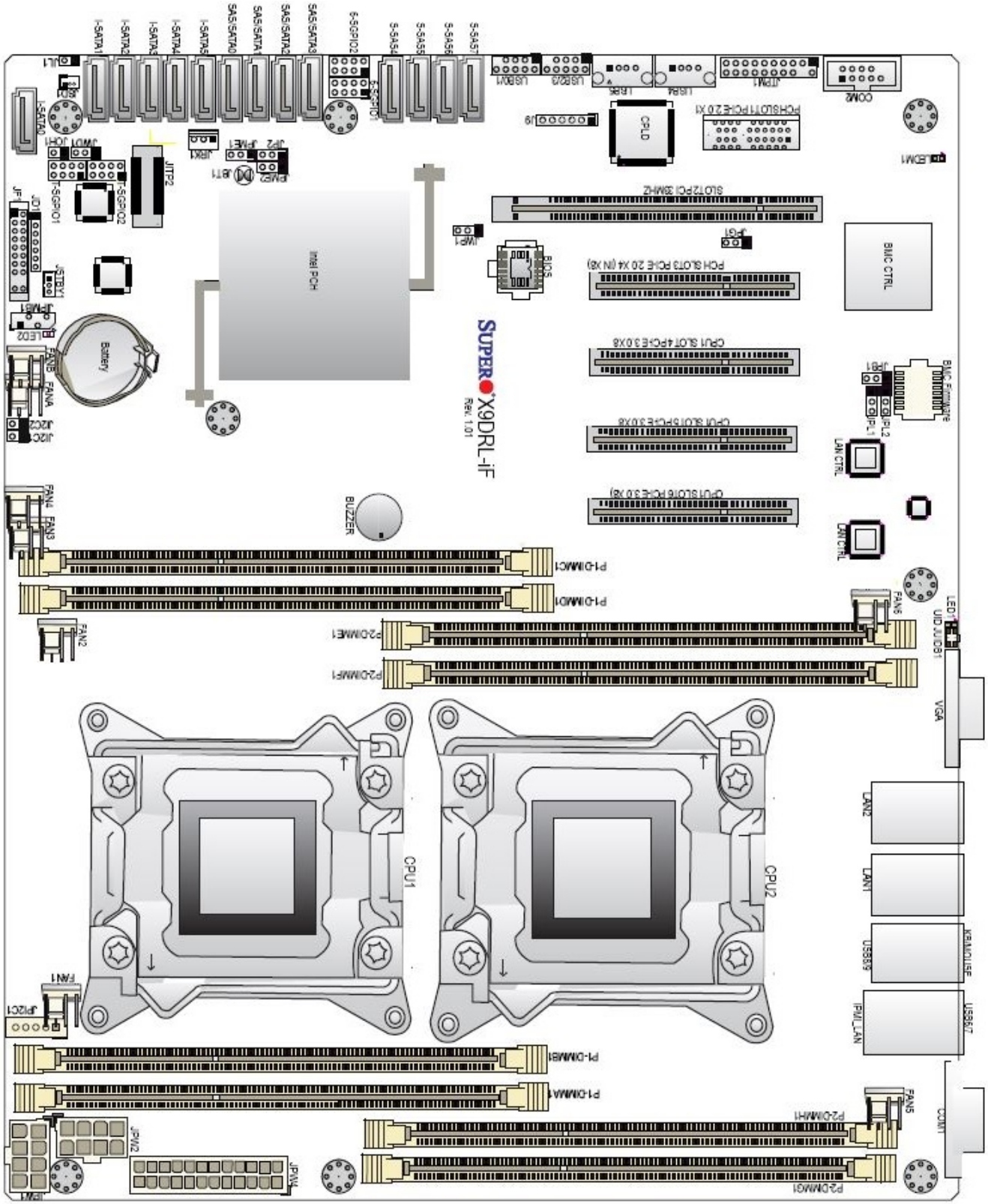
**Note:** It is highly recommended that you use magnetized screwdrivers so as to prevent screws from dropping inside the case and/or aiding in retrieving them if they do drop inside the case. (If your screwdriver isn't already magnetized, you can make it so by repeatedly "stroking" the blade with a permanent magnet.

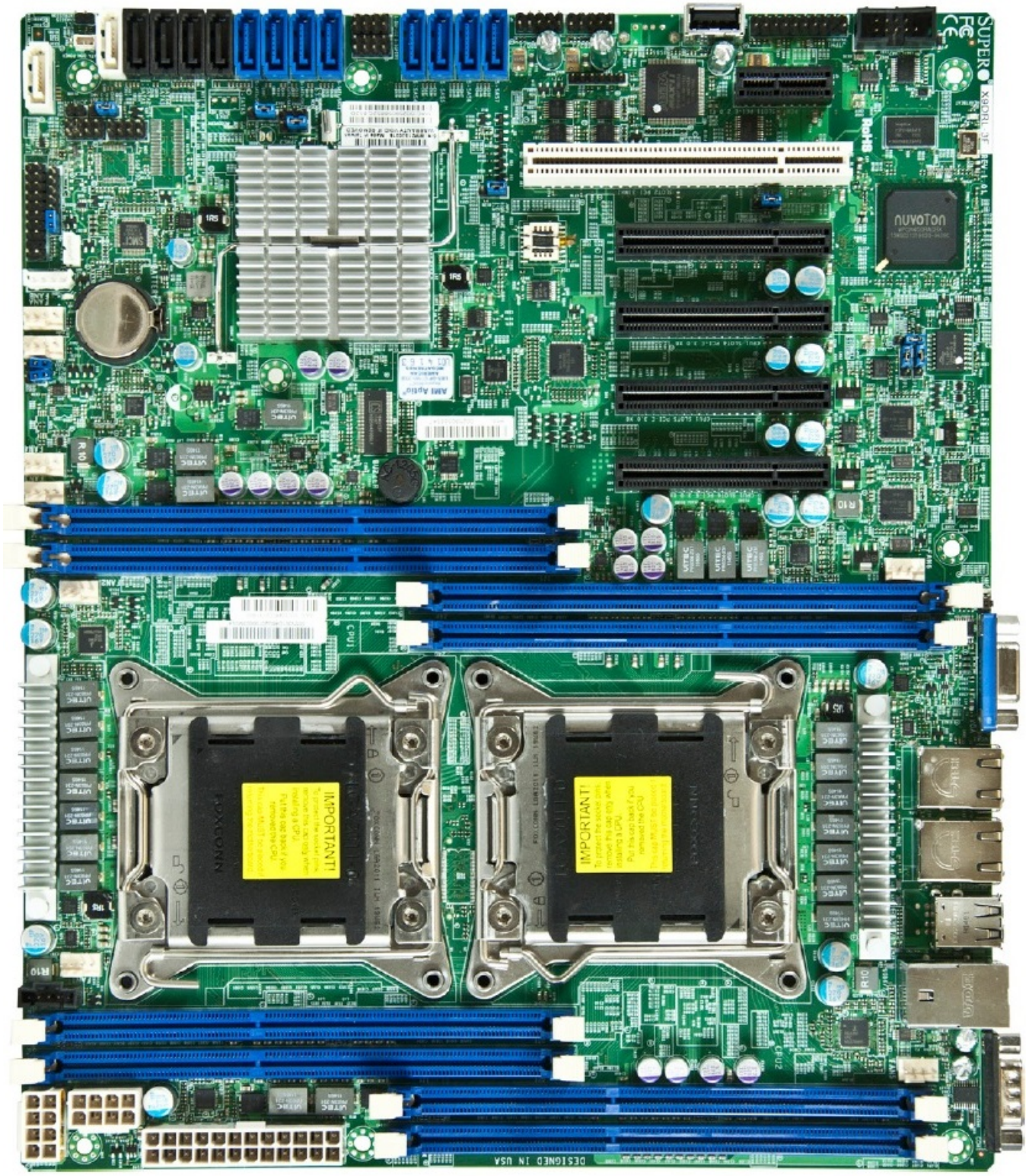
**Note:** For additional immunity to vibration, all screws in a MaxCube system are secured with removable blue LOCTITE. If you remove any screws, then you should reapply LOCTITE prior to replacing those screws.

# Names and Types of Screws

MaxCube systems use a variety of different screw types. In order to help you follow the instructions in this chapter, details on these screws are provided in *Appendix C*.

# Motherboard Diagrams

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IMPORTANT!
IMPORTANT!
DESIGNED IN USA

# Removal of optional display/keyboard assembly

1) In order to gain access to the main internal chassis the optional display/keyboard assembly must be removed and set aside temporarily. Two captured screws hold the pivot end of the assembly to the main chassis. Loosen these two screws as illustrated in Figure 3-1.

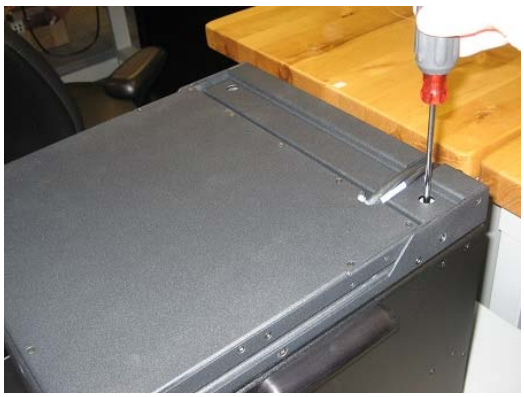


**Figure 3-1**

**Figure 3-2**

2) Slide the display/keyboard assembly away from the pivot end to free it from 2 slotted brackets as illustrated in Figures 3-2 and 3-3. Now the display/keyboard assembly can be placed next to the main chassis as illustrate in Figure 3-4. It is not necessary to disconnect the cables for the keyboard and display unless you want to store the assembly away from your work area.

**Figure 3-3**

**Figure 3-4**

# Accessing the MaxCube main chassis internals

1) Loosen the two captured screws with a flat blade screwdriver as illustrated in Figure 3-5.

**Figure 3-5**

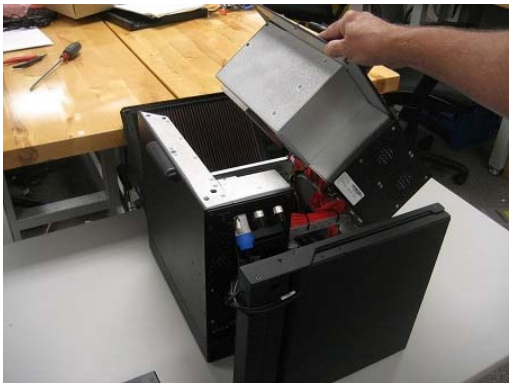


**Figure 3-6**

2) Gently pull the upper portion of the chassis and pivot down to the table surface as illustrated in Figure 3-6 and 3.7.

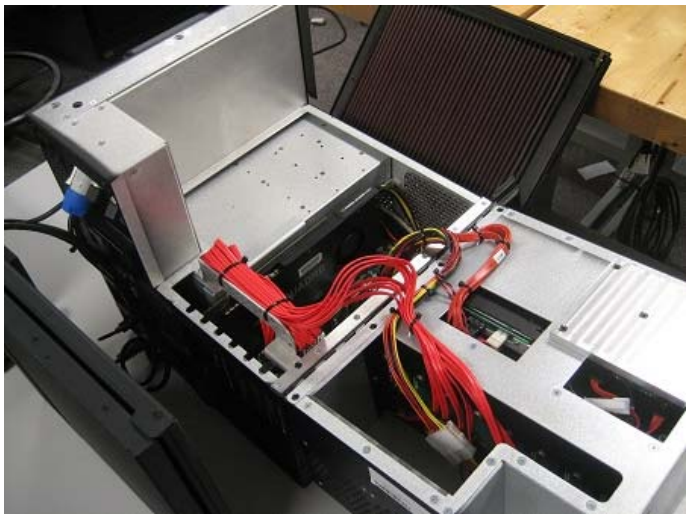


**Figure 3-7**

**Note:** The MaxCube documented in this guide includes the optional internal UPS. This UPS must be removed in many cases to service memory and other components.

# Removing the optional internal UPS

1) The front access panel must be removed to access the internal UPS. There are a lot of screws. Be careful to account for all of the screws.

**Figure 3-8**

2) Set aside the front access panel as illustrated in Figure 3-9. Now the cables connecting the UPS to the rest of the system must be removed..

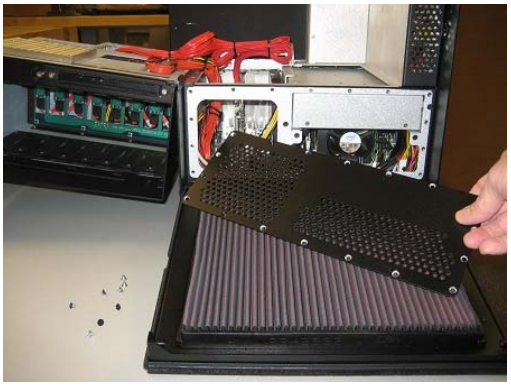


**Figure 3-9**

**Figure 3-10**

3) Disconnect the two inline cables as illustrated in Figure 3-11 and 3-12. The AC cable to the main system should have been disconnected prior to these steps. A small amount of arcing may occur while disconnecting these cables.

**Figure 3-11**

.

**Figure 3-12**

4) Disconnect the USB cable for the UPS as illustrated in Figure 3-13. This cable may be connected to an internal USB header depending on the motherboard used.

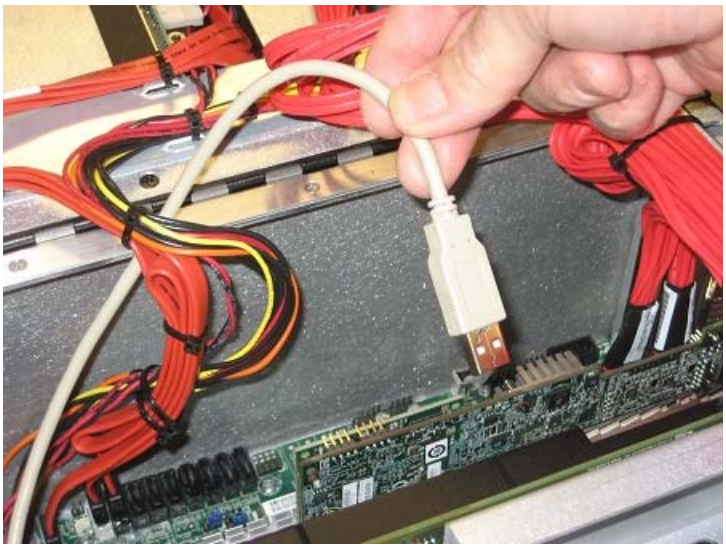


**Figure 3-13**

5) The UPS may now be slid out of its channel as illustrated in Figure 3-14. This step may take a considerable amount of force.

**Figure 3-14**

6) Figure 3-15 shows the removed UPS option.

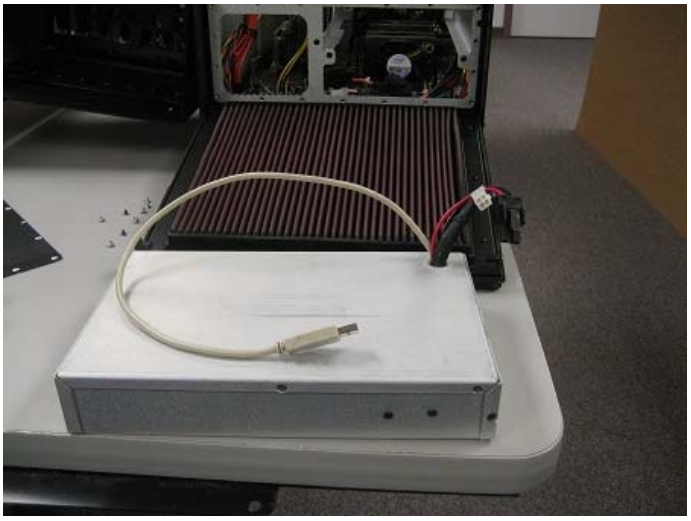


**Figure 3-15**

7) Observe the channel and slide bracket for the UPS option as illustrated in Figure 3-16.

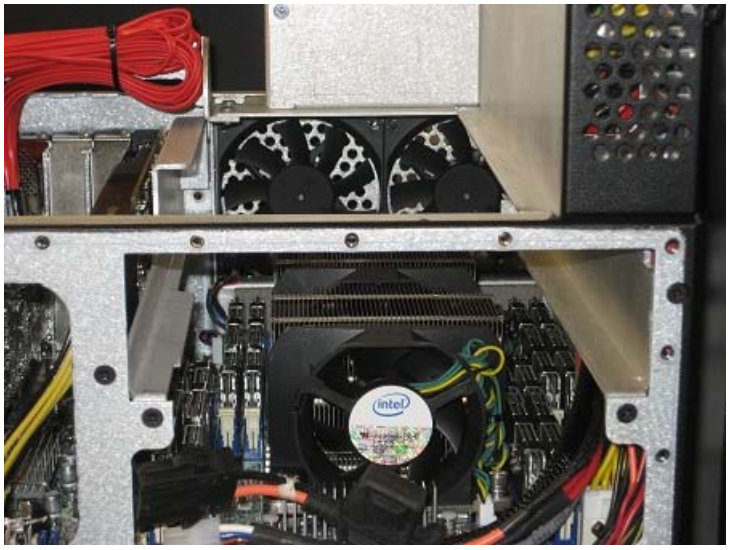



**Figure 3-16**

# Adding/Replacing Memory Sticks

**Note:** Due to the fact that high-end computer systems can experience a host of memory compatibility issues and problems, you should only use replacement and/or additional memory sticks supplied by RPC.

In the unlikely event that you begin to experience problems with the memory that is already resident in your MaxCube, you must first determine which stick has failed under the direction of RPC support.

1) Figure 3-18 shows a photo of the memory section of our motherboard. To obtain maximum memory performance all four slots for each CPU should be used.

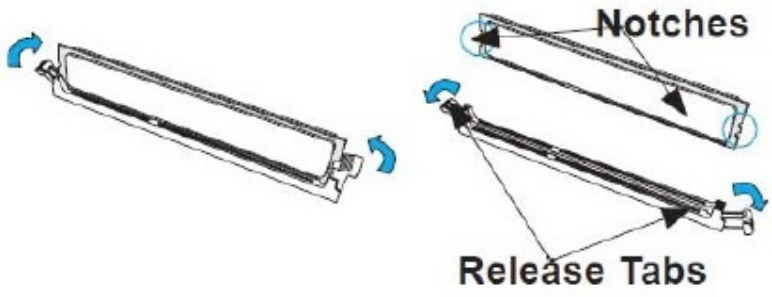



**Figure 3-17**

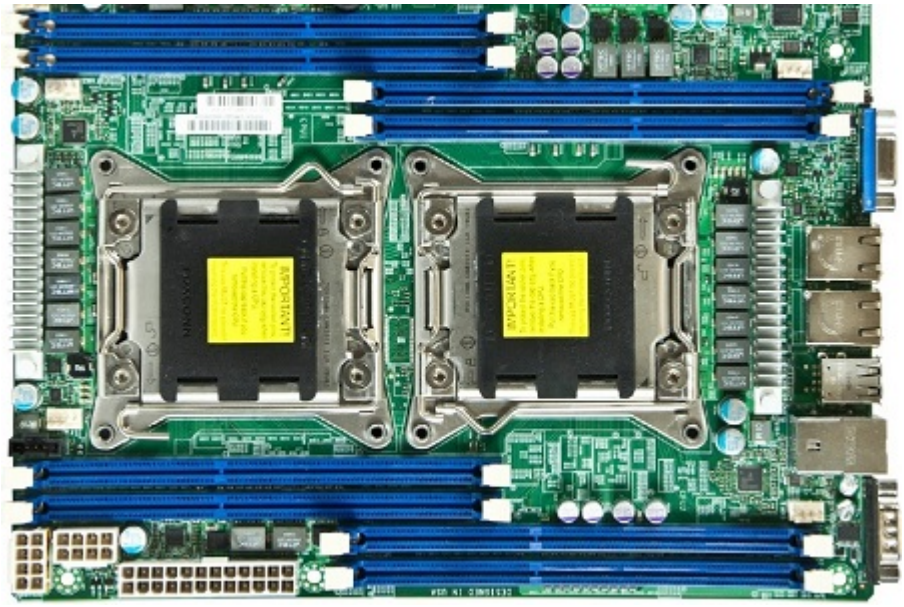


**Figure 3-18**

2) In order to remove and replace a memory stick, gently press down-and-out on the two plastic “Release Tabs” at either side of the stick. This will cause the stick to pop out, after which you may gently remove the stick from the system as illustrated in Figure 3-19..

**Figure 3-19**

3) Take the memory sticks provided by RPC support and incorporate them into the system by performing the steps described above in reverse order. Make sure that the motherboard memory latch tab is locked into the slot in the memory stick.

# Removing/Replacing PCIe Cards

For the purposes of these discussions, we will replace the PCIe graphics card from the bottom PCIe slot.

**NOTE**: Observe the PCIe slot configuration with four PCIe x8 slots as illustrated in Figure 3-20. In the case of this particular example, the graphics card fits into the bottom PCIe slot. This is the only slot that allows for a PCIe x16 graphics card to extend out of the back of the PCIe x8 mechanical slot.

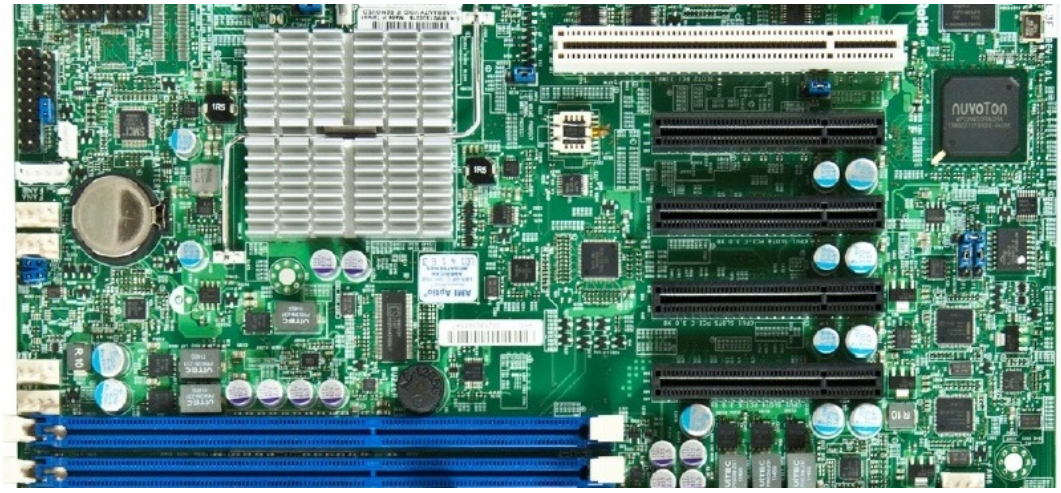



**Figure 3-20**

1) Loosen the two screws from the DVI cable illustrated in Figure 3-21. Now remove the DVI cable from the PCIe graphics card.

**Figure 3-21**

**NOTE**: Some PCIe cards require auxiliary power and may have a power cable from the power supply to the card. Disengage such cables when removing the PCIe card and re-engage them after replacing (or installing) such a card.

2) Remove the auxiliary power connector from the graphics card as illustrated in Figures 3-22 and 3-23.

**Figure 3-22**

**Figure 3-23**

3) Remove the screw securing the PCIe graphics card as illustrated in Figure 3-24.

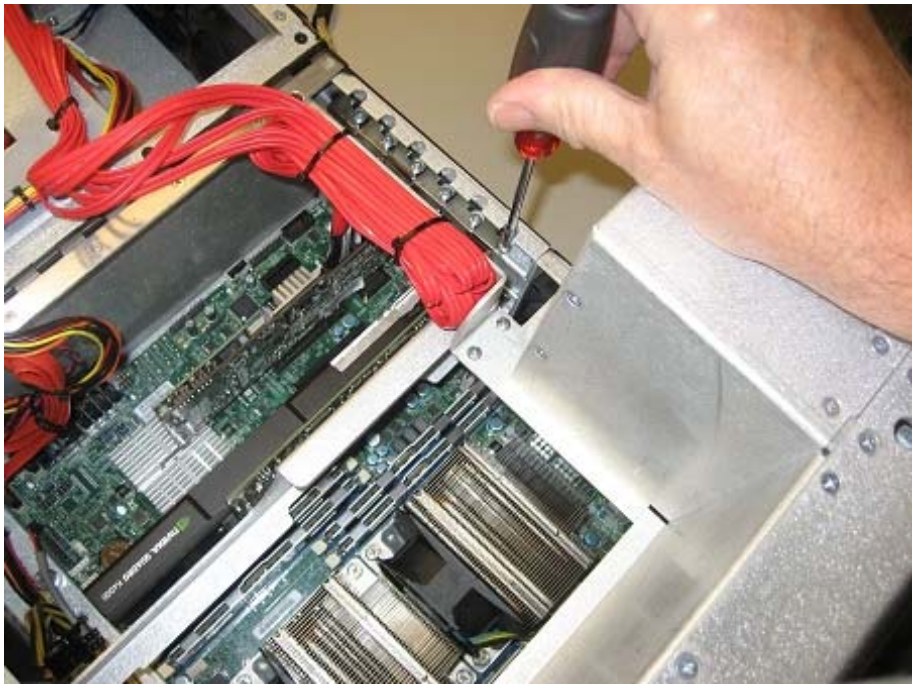


**Figure 3-24**

4) Remove the card from the system as illustrated in Figure 3-25.

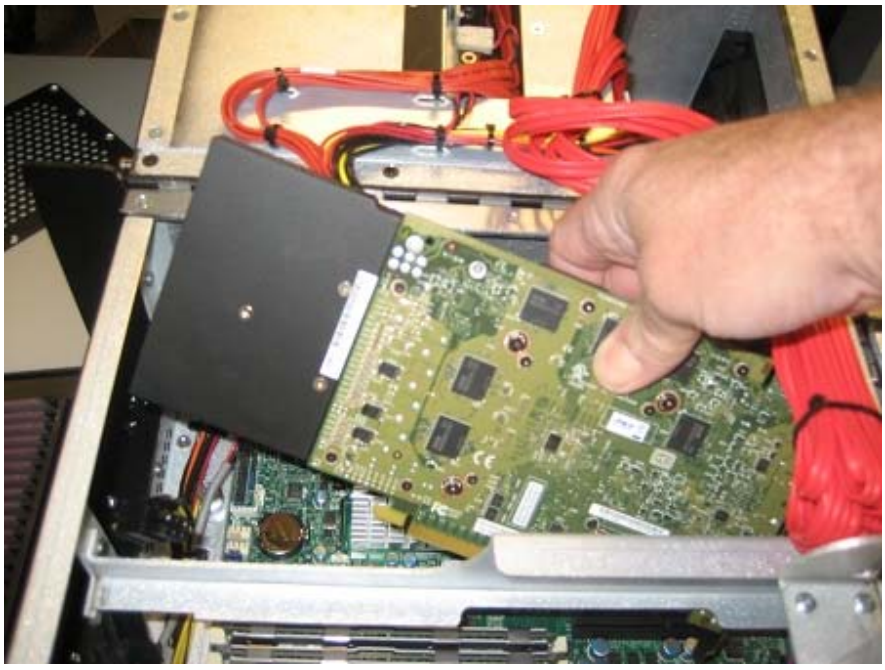


**Figure 3-25**

# Appendix A: Creating and Using Backup Images (Including Restoring Your OS)

## Introduction

Every Windows based system comes equipped with an *RPC Recovery DVD*. In addition to an image of your operating system, this disc also contains a copy of the *Acronis True Image*™ application from Acronis (www.acronis.com). *Acronis True Image* is a superb tool for operating system (OS) deployment, software distribution, back-up, and disaster recovery. In particular, this utility allows you to make reliable backups of your system drives, including applications and critical data. There are two primary scenarios that need be considered as follows:

### Restoring the RPC-supplied Image

This is the worst-case scenario. It assumes that your system has undergone some catastrophic failure such that – under the direction of RPC support – you are going to replace your primary hard drive(s) and/or restore the original RPC-supplied image. In this case, you will lose any applications and data that you have installed, loaded, or created on your main “C:” drive/partition.

**Note:** If you do re-load the original RPC-supplied image, you will also have to re-run the initialization procedures – including re-activating/re-registering your OS license.

Power-down the system.

1) Ensure that the bootable recovery DVD supplied in the accessory pack is in the system's CD/DVD drive.
2) Power-up the system. This will automatically launch the Acronis application as shown in Figure A-1.

**Figure A-1**

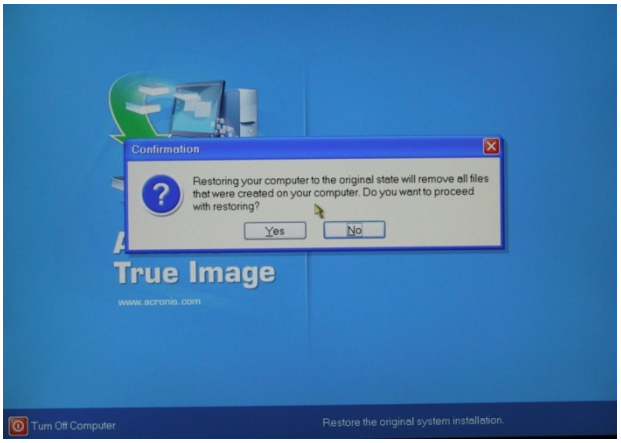

Confirmation
Restoring your computer to the original state will remove all files that were created on your computer. Do you want to proceed with restoring?
Yes
No
True Image
www.acronis.com
Turn Off Computer
Restore the original system installation.

**Figure A-2**

3) Select **Yes** in the dialog shown in Figure A-2 to allow Acronis to completely restore your disk.
4) Figures A-3 and A-4 show the completing steps for restoring you image back to the RPC configuration as originally shipped.

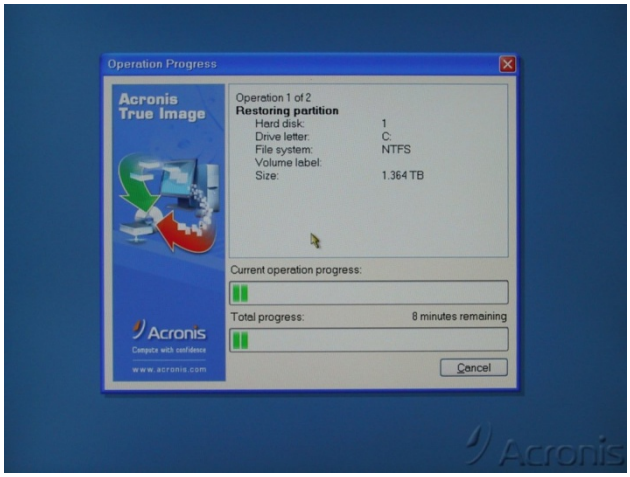



Figure A-3

Figure A-4

## Creating Your Own Image

This scenario assumes that you have added new applications, loaded or created new datasets, and generally configured and customized your MaxVision system the way you like it. At this stage, before you deploy the system, it is strongly recommended that you use the *Acronis True Image* application to create an image of the system. Similarly, as you add additional applications or generate additional datasets, it is strongly recommended that you create periodic backup images. This greatly facilitates your ability to return the system to a “known good state” should any problems arise (such as a virus attack or a hard drive failure) at some stage in the future.

You can create an image to another SATA disk or USB disk directly or even a networked disk. For the purposes of this example, we will assume that you are writing your image to CD media (as opposed to DVD), and that the image will occupy two CDs.

1) Power-down the system.
2) In this case you will need to create your own Acronis Recovery bootable DVD media or bootable USB memory stick from the Acronis Windows application
3) Ensure that the bootable recovery DVD supplied in the accessory pack is in the system's CD/DVD drive. In the case of a multiple DVD image, ensure Disk #1 is in the drive.
4) Power-up the system. This will automatically launch the Acronis application as shown in Figure A5. Use the mouse to select the Acronis item as shown in Figure A-5.

Figure A-5

Figure A-6

5) Following the splash screen (Figure A-6), under the **Pick a Task** heading, select the **Backup** option (the top item) as illustrated in Figure A-7.

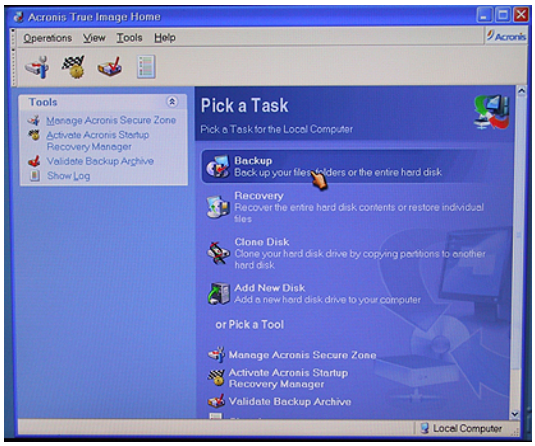

Acronis True Image Home
Operations View Tools Help
Tools
Manage Acronis Secure Zone
Activate Acronis Startup Recovery Manager
Validate Backup Archive
Show Log
Pick a Task
Pick a Task for the Local Computer
Backup
Back up your files, folders or the entire hard disk
Recovery
Recover the entire hard disk contents or restore individual files
Clone Disk
Clone your hard disk drive by copying partitions to another hard disk
Add New Disk
Add a new hard disk drive to your computer
or Pick a Tool
Manage Acronis Secure Zone
Activate Acronis Startup Recovery Manager
Validate Backup Archive
Local Computer

**Figure A-7**

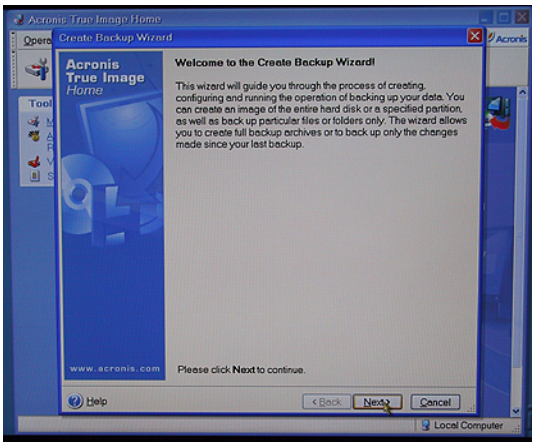

Acronis True Image Home
Create Backup Wizard
Acronis True Image Home
Welcome to the Create Backup Wizard!
This wizard will guide you through the process of creating, configuring and running the operation of backing up your data. You can create an image of the entire hard disk or a specified partition, as well as back up particular files or folders only. The wizard allows you to create full backup archives or to back up only the changes made since your last backup.
www.acronis.com
Please click Next to continue.
Help
< Back
Next >
Cancel
Local Computer

**Figure A-8**

6) Follow the actions depicted by the screenshots shown in Figures A-8 through A-22.

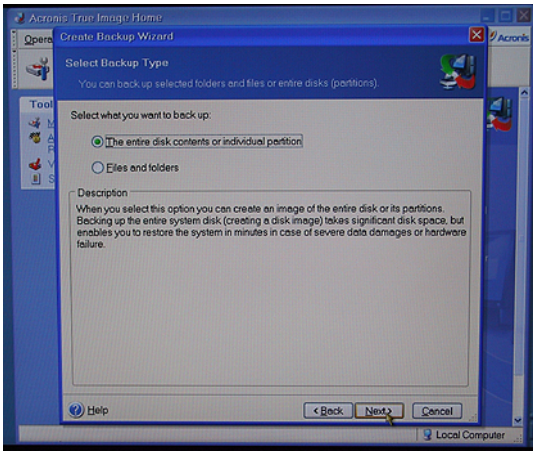

Acronis True Image Home
Create Backup Wizard
Select Backup Type
You can back up selected folders and files or entire disks (partitions).
Select what you want to back up:
The entire disk contents or individual partition
Files and folders
Description
When you select this option you can create an image of the entire disk or its partitions. Backing up the entire system disk (creating a disk image) takes significant disk space, but enables you to restore the system in minutes in case of severe data damages or hardware failure.
Help
< Back
Next >
Cancel
Local Computer

**Figure A-9**

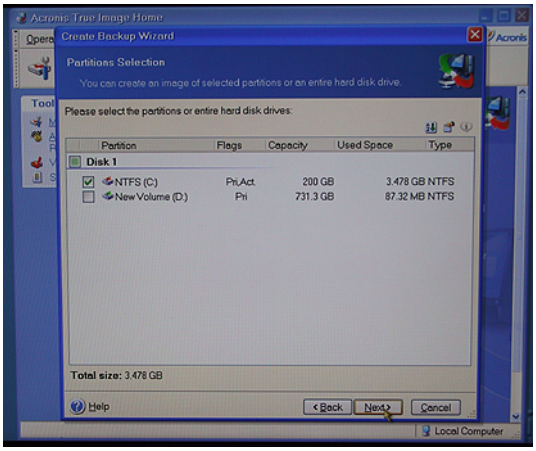



**Figure A-10**

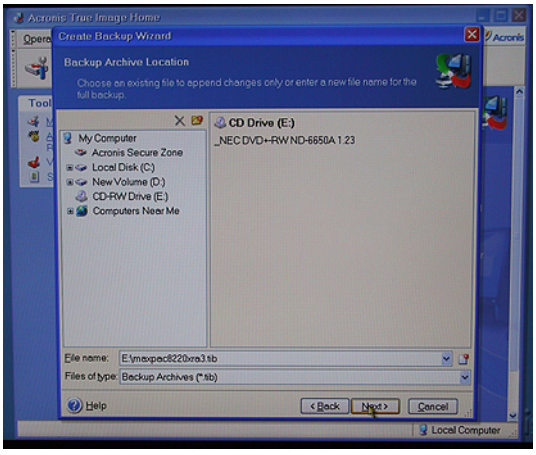



**Figure A-11**

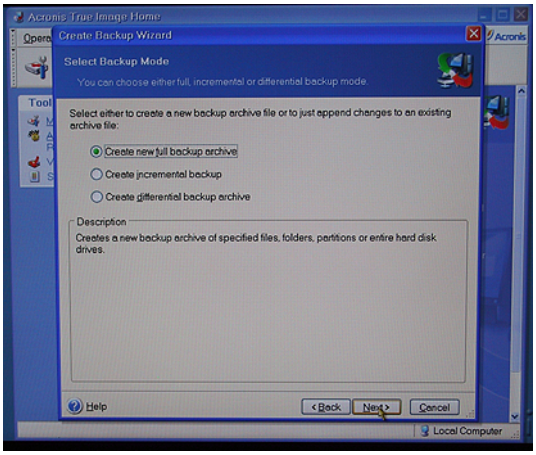

Acronis True Image Home
Create Backup Wizard
Select Backup Mode
You can choose either full, incremental or differential backup mode.
Select either to create a new backup archive file or to just append changes to an existing archive file:
Create new full backup archive
Create incremental backup
Create differential backup archive
Description
Creates a new backup archive of specified files, folders, partitions or entire hard disk drives.
Help
< Back
Next >
Cancel
Local Computer

**Figure A-12**

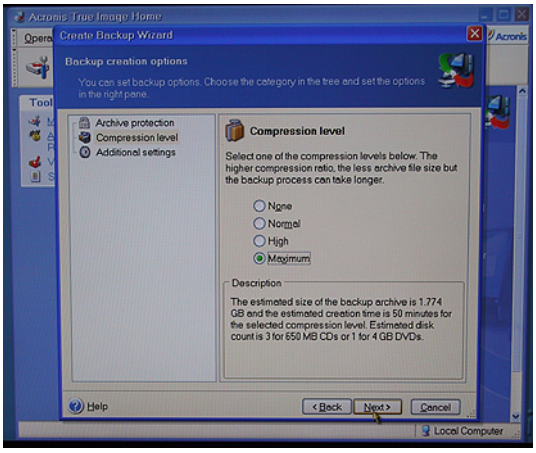

Acronis True Image Home
Create Backup Wizard
Backup creation options
You can set backup options. Choose the category in the tree and set the options in the right pane.
Archive protection
Compression level
Additional settings
Compression level
Select one of the compression levels below. The higher compression ratio, the less archive file size but the backup process can take longer.
None
Normal
High
Maximum
Description
The estimated size of the backup archive is 1,774 GB and the estimated creation time is 50 minutes for the selected compression level. Estimated disk count is 3 for 650 MB CDs or 1 for 4 GB DVDs.
Help
< Back
Next >
Cancel
Local Computer

Figure A-13

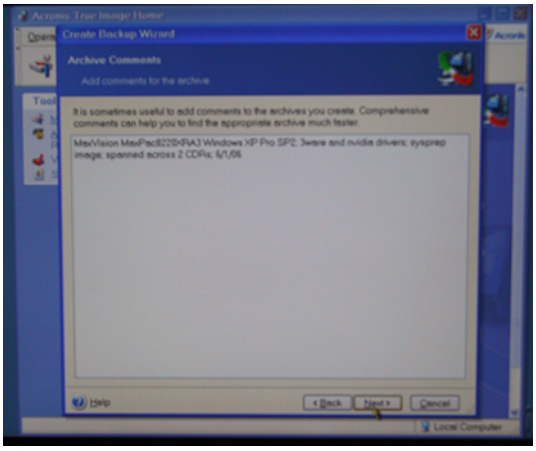

Acronis True Image Home
Create Backup Wizard
Archive Comments
Add comments for the archive
It is sometimes useful to add comments to the archives you create. Comprehensive comments can help you to find the appropriate archive much faster.
MaxVision MaxPac8220xRA3 Windows XP Pro SP2; 3ware and nvidia drivers; sysprep image; spanned across 2 CDRs; 6/1/06
Help
< Back
Next >
Cancel
Local Computer

Figure A-14

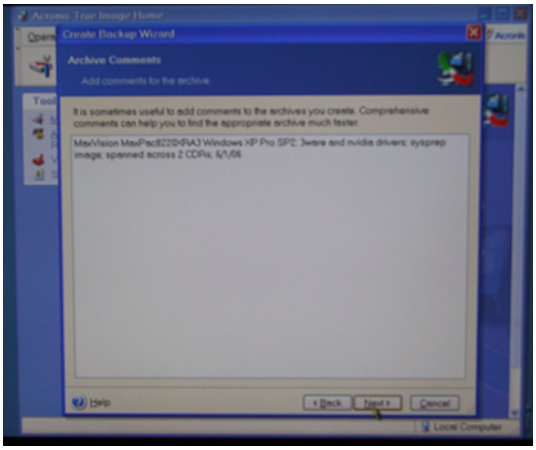

Acronis True Image Home
Create Backup Wizard
Archive Comments
Add comments for the archive
It is sometimes useful to add comments to the archives you create. Comprehensive comments can help you to find the appropriate archive much faster.
MaxVision MaxPac8220xRA3 Windows XP Pro SP2; 3ware and nvidia drivers; sysprep image; spanned across 2 CDRs; 6/1/06
Help
< Back
Next >
Cancel
Local Computer

Figure A-15

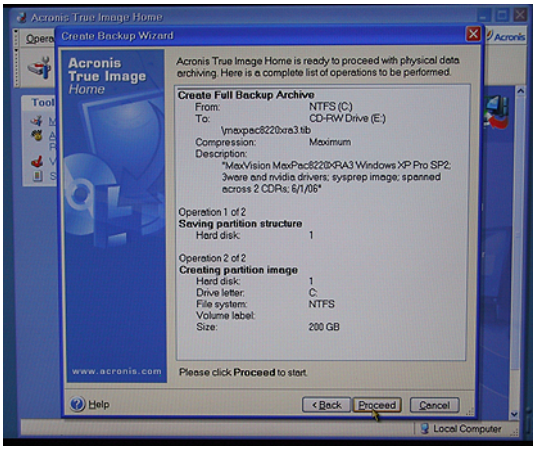



Figure A-16

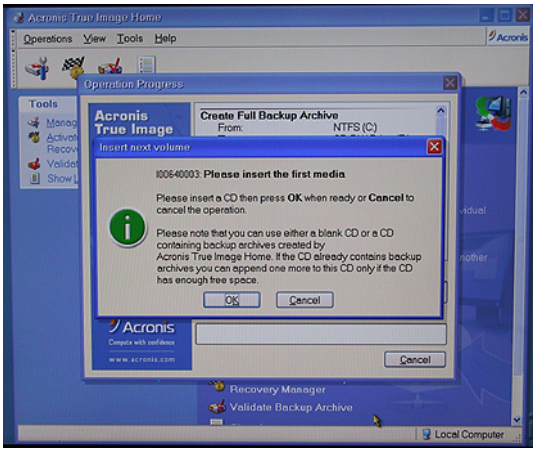

Acronis True Image Home
Operations View Tools Help
Operation Progress
Acronis True Image
Create Full Backup Archive
From: NTFS (C:)
Insert next volume
I00640003: Please insert the first media
Please insert a CD then press OK when ready or Cancel to cancel the operation.
Please note that you can use either a blank CD or a CD containing backup archives created by Acronis True Image Home. If the CD already contains backup archives you can append one more to this CD only if the CD has enough free space.
OK
Cancel
Acronis
Cancel
Recovery Manager
Validate Backup Archive
Local Computer

Figure A-17

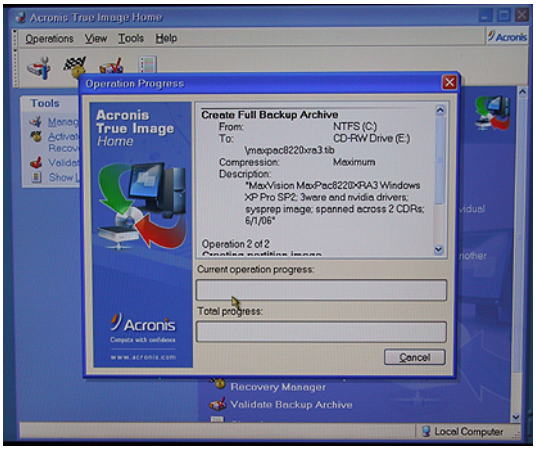



Figure A-18

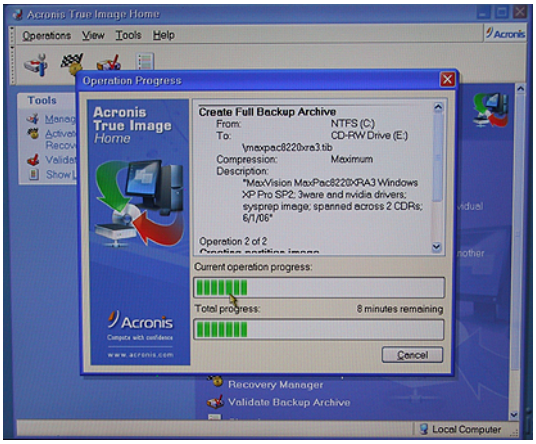



**Figure A-19**

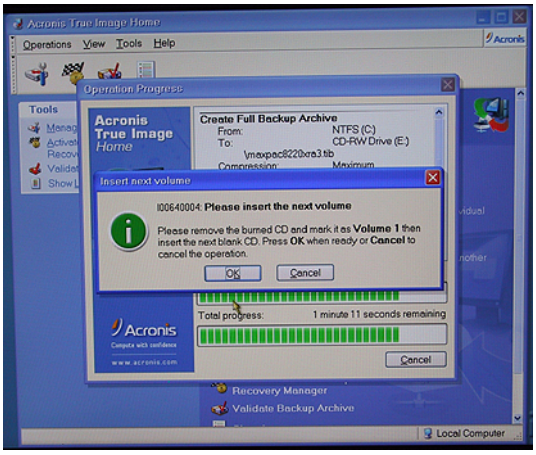

Acronis True Image Home
Operations View Tools Help
Operation Progress
Create Full Backup Archive
Insert next volume
I00640004: Please insert the next volume
Please remove the burned CD and mark it as Volume 1 then insert the next blank CD. Press OK when ready or Cancel to cancel the operation.
OK
Cancel
Total progress: 1 minute 11 seconds remaining
Recovery Manager
Validate Backup Archive
Local Computer

**Figure A-20**

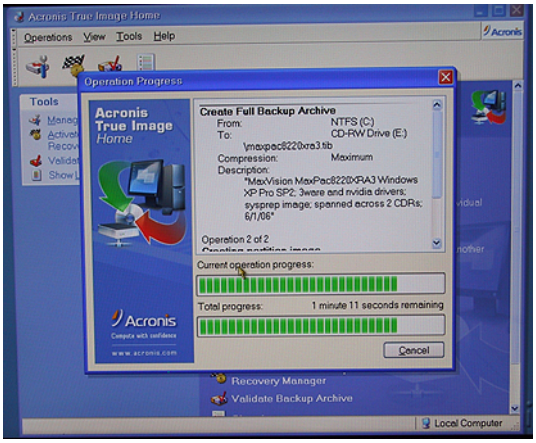



**Figure A-21**

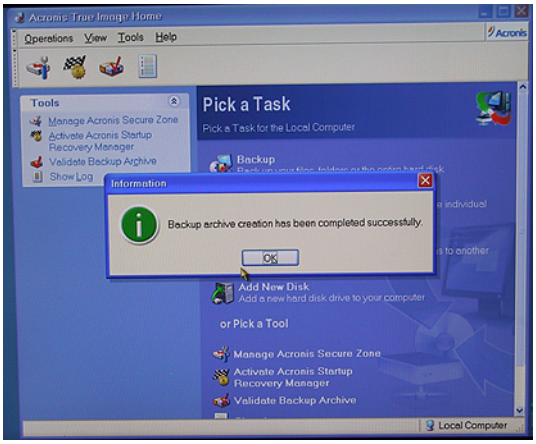

Acronis True Image Home
Operations View Tools Help
Pick a Task
Pick a Task for the Local Computer
Information
Backup archive creation has been completed successfully.
OK
Add New Disk
Add a new hard disk drive to your computer
or Pick a Tool
Manage Acronis Secure Zone
Activate Acronis Startup Recovery Manager
Validate Backup Archive
Local Computer

**Figure A-22**

## Restoring Your Own Image

**Note:** If you do re-load an image (containing the OS) that you have created yourself following your original activation and registration of the OS, you will NOT be required to re-activate and re-register the OS so long as you are restoring the image to the original machine. However, you will be required to re-activate and re-register the OS if you re-load the image onto a different machine. Prior to shipment from RPC, the Microsoft SYSPREP utility is used to clear out the license number and other settings following system test. If you create your own image, and if SYSPREP is not run, and you subsequently load your image onto another MaxPac system, then Microsoft will require activation before use (no 30-day grace period). At this time, you will need to supply the correct OS license number for the MaxPac and activate prior to use (this procedure may vary depending on the version and license type of Windows used).

For the purposes of this example, we will assume that you are restoring your image from CD media (as opposed to DVD), and that the image occupies two CDs.

1) Power-down the system.

2) Ensure that the bootable recovery DVD supplied in the accessory pack is in the system's CD/DVD drive. In the case of a multiple DVD image, ensure Disk #1 is in the drive.

3) Power-up the system. This will automatically launch the Acronis application as shown in Figure A-23. Use the mouse to select the Acronis item as shown in Figure A-23.

**Figure A-23**

**Figure A-24**

4) Following the splash screen (Figure A-24), under the **Pick a Task** heading, select the **Restore** option (the top item) as illustrated in Figure A-25.

5) Follow the actions depicted by the screenshots shown in Figures A-25 through A-43.

Acronis True Image Home
Operations View Tools Help
Tools
Manage Acronis Secure Zone
Activate Acronis Startup Recovery Manager
Validate Backup Archive
Show Log
Pick a Task
Pick a Task for the Local Computer
Backup
Back up your files, folders or the entire hard disk
Recovery
Recover the entire hard disk contents or restore individual files
Clone Disk
Clone your hard disk drive by copying partitions to another hard disk
Add New Disk
Add a new hard disk drive to your computer
or Pick a Tool
Manage Acronis Secure Zone
Activate Acronis Startup Recovery Manager
Validate Backup Archive
Local Computer

**Figure A-25**

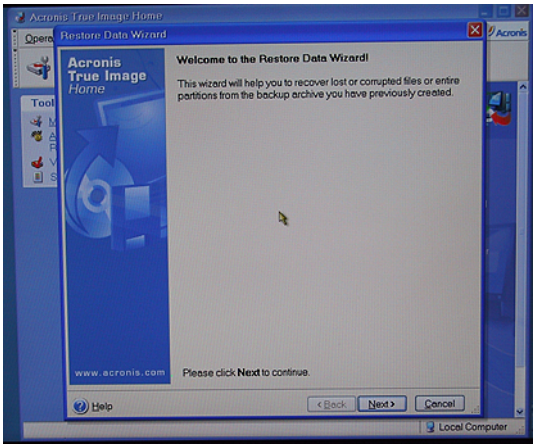

Acronis True Image Home
Restore Data Wizard
Acronis True Image Home
Welcome to the Restore Data Wizard!
This wizard will help you to recover lost or corrupted files or entire partitions from the backup archive you have previously created.
www.acronis.com
Please click Next to continue.
Help
< Back
Next >
Cancel
Local Computer

**Figure A-26**

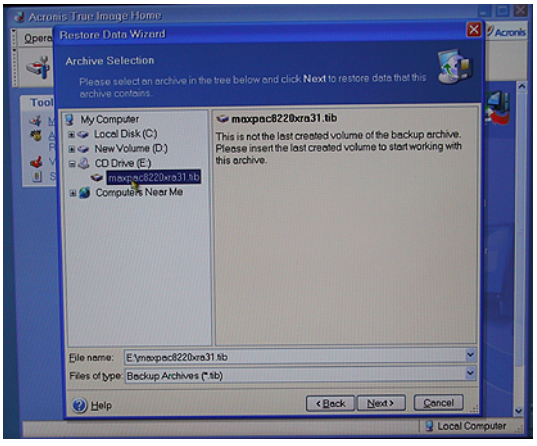

Acronis True Image Home
Restore Data Wizard
Archive Selection
Please select an archive in the tree below and click Next to restore data that this archive contains.
My Computer
Local Disk (C:)
New Volume (D:)
CD Drive (E:)
maxpac8220xra31.tib
Computers Near Me
maxpac8220xra31.tib
This is not the last created volume of the backup archive. Please insert the last created volume to start working with this archive.
File name: E:\maxpac8220xra31.tib
Files of type: Backup Archives (*.tib)
Help
< Back
Next >
Cancel
Local Computer

**Figure A-27**

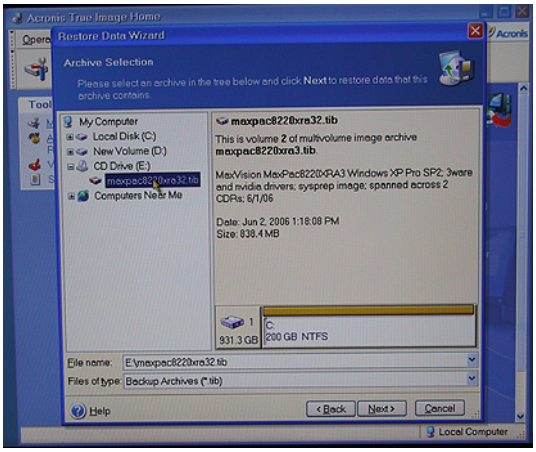

Acronis True Image Home
Restore Data Wizard
Archive Selection
Please select an archive in the tree below and click Next to restore data that this archive contains.
My Computer
Local Disk (C:)
New Volume (D:)
CD Drive (E:)
maxpac8220xra32.tib
Computers Near Me
maxpac8220xra32.tib
This is volume 2 of multivolume image archive maxpac8220xra3.tib.
MaxVision MaxPac8220XRA3 Windows XP Pro SP2; 3ware and nvidia drivers; sysprep image; spanned across 2 CDRs; 6/1/06
Date: Jun 2, 2006 1:18:08 PM
Size: 838.4 MB
1
931.3 GB
C:
200 GB NTFS
File name: E:\maxpac8220xra32.tib
Files of type: Backup Archives (*.tib)
Help
< Back
Next >
Cancel
Local Computer

**Figure A-28**

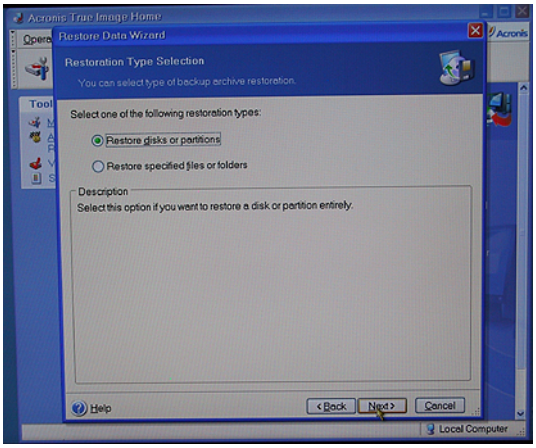

Acronis True Image Home
Restore Data Wizard
Restoration Type Selection
You can select type of backup archive restoration.
Select one of the following restoration types:
Restore disks or partitions
Restore specified files or folders
Description
Select this option if you want to restore a disk or partition entirely.
Help
< Back
Next >
Cancel
Local Computer

Figure A-29

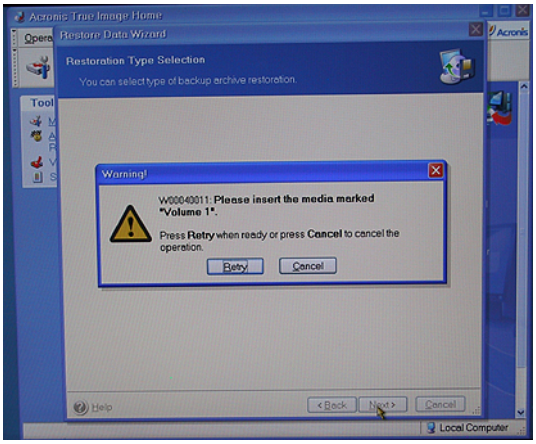



Figure A-30

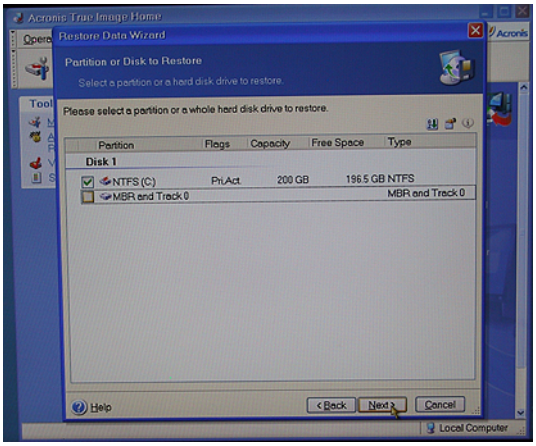



Figure A-31

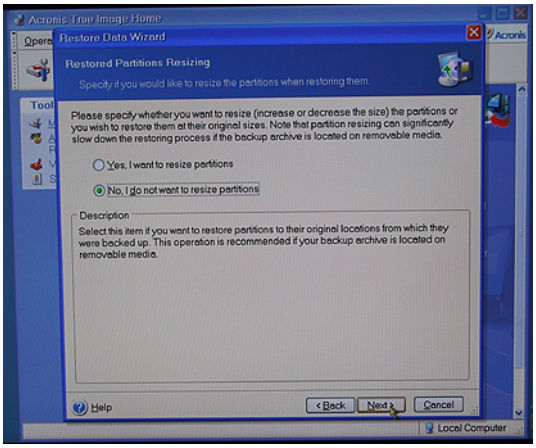

Acronis True Image Home
Restore Data Wizard
Restored Partitions Resizing
Specify if you would like to resize the partitions when restoring them.
Please specify whether you want to resize (increase or decrease the size) the partitions or you wish to restore them at their original sizes. Note that partition resizing can significantly slow down the restoring process if the backup archive is located on removable media.
Yes, I want to resize partitions
No, I do not want to resize partitions
Description
Select this item if you want to restore partitions to their original locations from which they were backed up. This operation is recommended if your backup archive is located on removable media.
Help
< Back
Next >
Cancel
Local Computer

Figure A-32

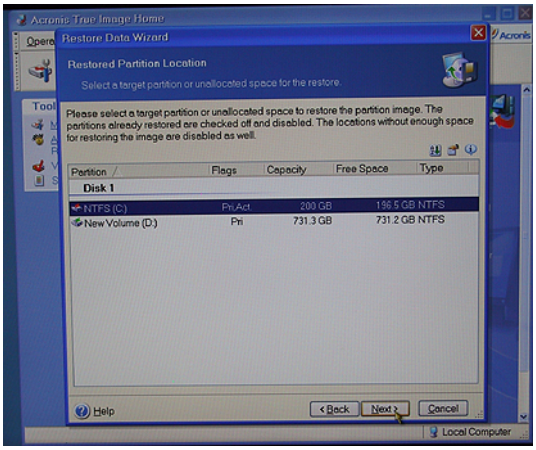



Figure A-33

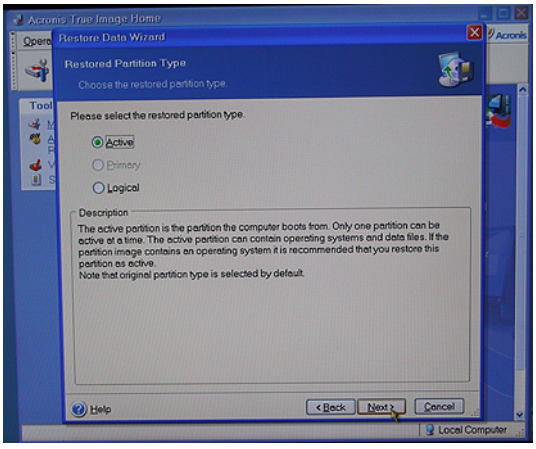

Acronis True Image Home
Restore Data Wizard
Restored Partition Type
Choose the restored partition type.
Please select the restored partition type.
Active
Primary
Logical
Description
The active partition is the partition the computer boots from. Only one partition can be active at a time. The active partition can contain operating systems and data files. If the partition image contains an operating system it is recommended that you restore this partition as active.
Note that original partition type is selected by default.
Help
< Back
Next >
Cancel
Local Computer

Figure A-34

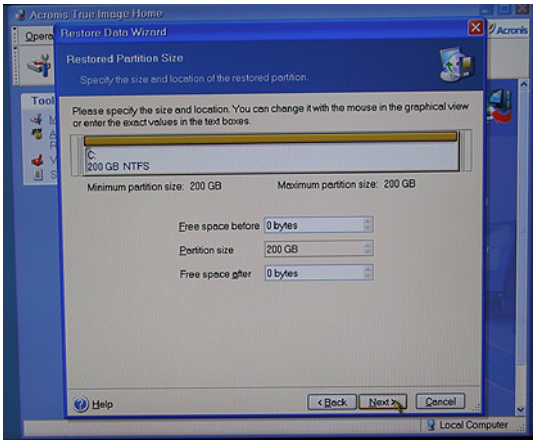

Acronis True Image Home
Restore Data Wizard
Restored Partition Size
Specify the size and location of the restored partition.
Please specify the size and location. You can change it with the mouse in the graphical view or enter the exact values in the text boxes.
C:
200 GB NTFS
Minimum partition size: 200 GB
Maximum partition size: 200 GB
Free space before 0 bytes
Partition size 200 GB
Free space after 0 bytes
Help
< Back
Next >
Cancel
Local Computer

Figure A-35

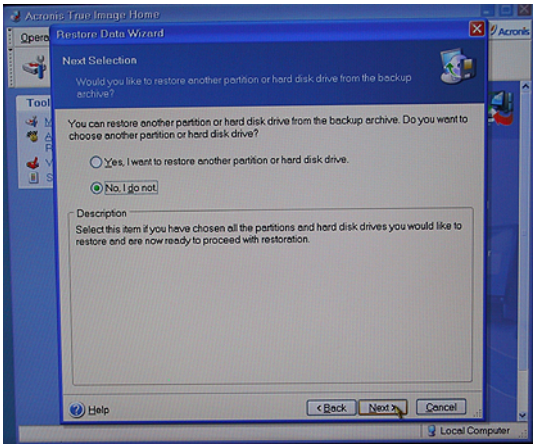

Acronis True Image Home
Restore Data Wizard
Next Selection
Would you like to restore another partition or hard disk drive from the backup archive?
You can restore another partition or hard disk drive from the backup archive. Do you want to choose another partition or hard disk drive?
Yes, I want to restore another partition or hard disk drive.
No, I do not.
Description
Select this item if you have chosen all the partitions and hard disk drives you would like to restore and are now ready to proceed with restoration.
Help
< Back
Next >
Cancel
Local Computer

Figure A-36

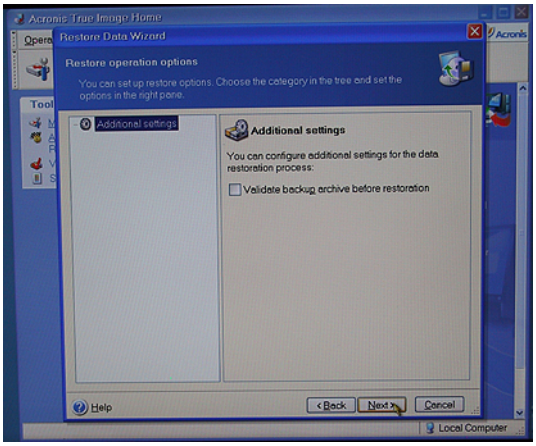

Acronis True Image Home
Restore Data Wizard
Restore operation options
You can set up restore options. Choose the category in the tree and set the options in the right pane.
Additional settings
Additional settings
You can configure additional settings for the data restoration process.
Validate backup archive before restoration
Help
< Back
Next >
Cancel
Local Computer

Figure A-37

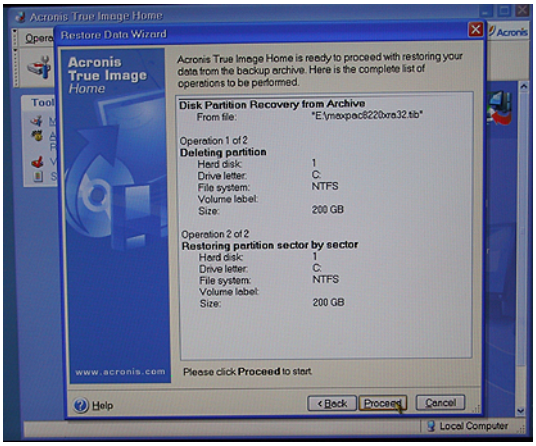



Figure A-38

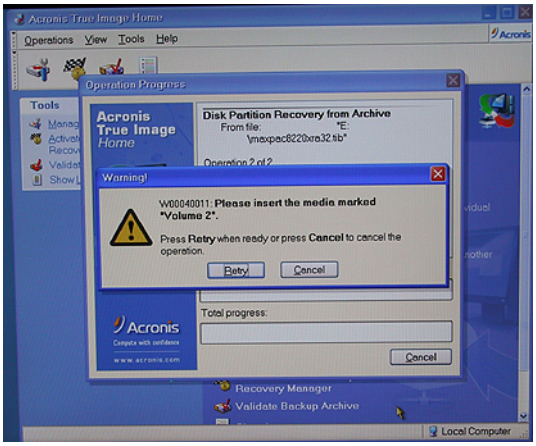



Figure A-39

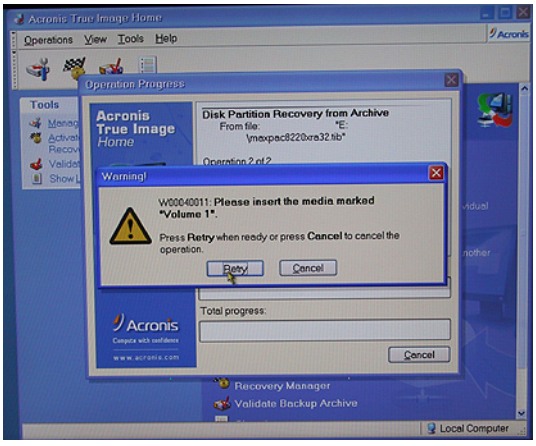



Figure A-40

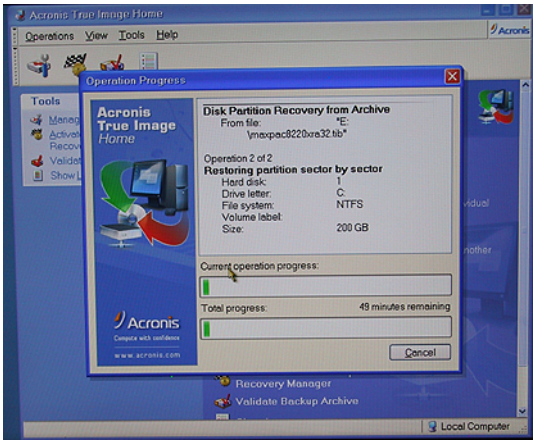



**Figure A-41**

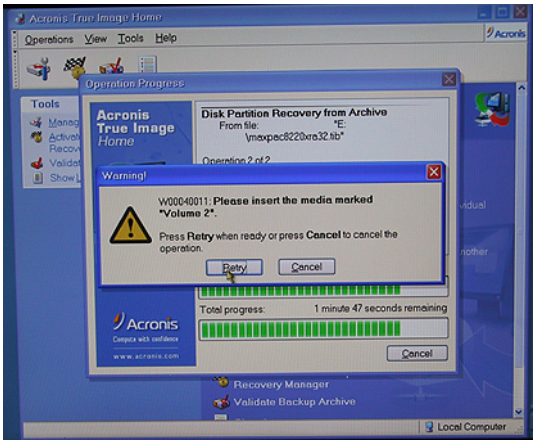



**Figure A-42**

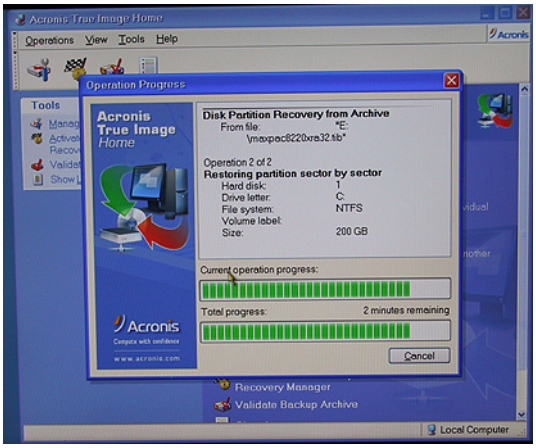



**Figure A-43**

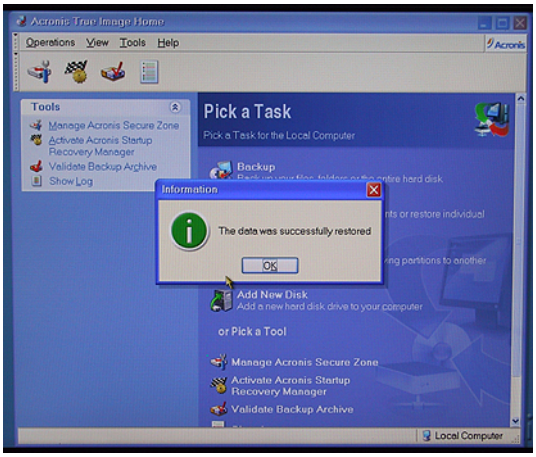



**Figure A-44**

# Appendix B: Regular System Maintenance

## Maintaining (Cleaning) the Filter

1) Before commencing this procedure, it is recommended that you place the system on some material that will protect both the system and the surface of the desk or table.
2) Position the optional display (if present) in the upright position.

**Figure B-1**

3) Gently pull the front air intake grill and lower it onto the desk or table as illustrated in Figures B-1. This filter itself is located inside the front air intake grill and provides filtered air at the intakes to the Disk Arrays (any uncovered fans act as exhausts)
4) The filter should be cleaned as mandated by local conditions (a good rule of thumb is to clean the filter when it looks physically dirty).
5) The filter is secured by a removable frame. Remove the three screws from the right edge of this frame as illustrated in Figures B-2, B-3, and B-4.

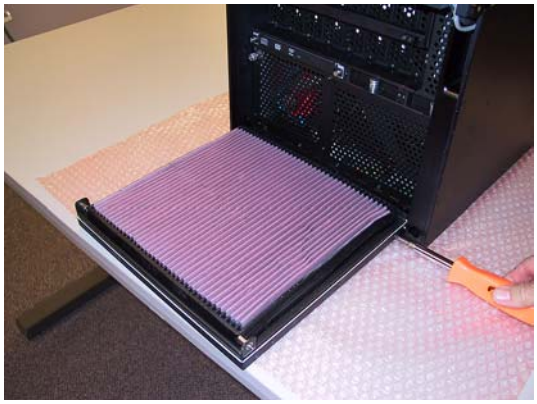


**Figure B-2**

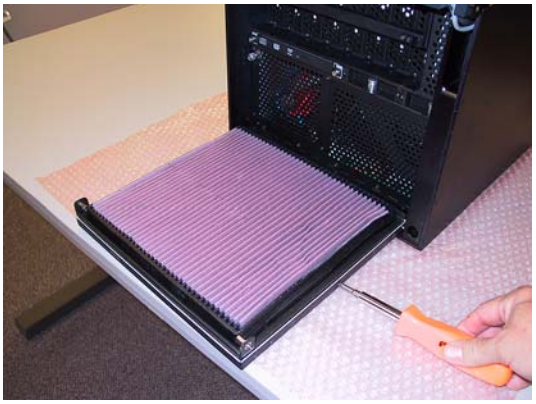


**Figure B-3**

6) Gently remove the filter frame as illustrated in Figures B-6 and B-7 and store it in a safe place.

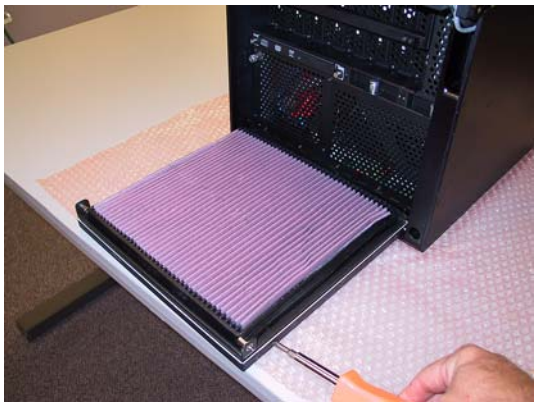


**Figure B-4**

**Figure B-5**

7) Gently remove the filter element as illustrated in Figure B-7 and place it on a working surface that is protected by some form of absorbent, disposable material.

**Figure B-6**

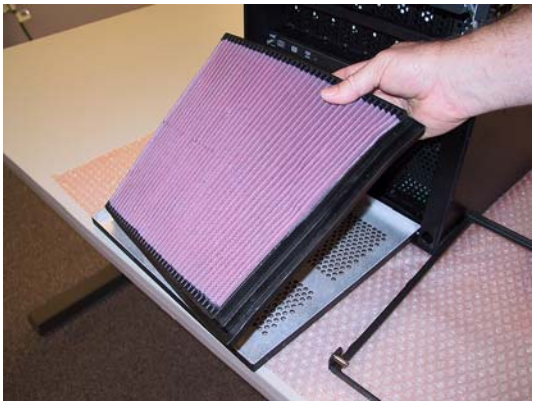


**Figure B-7**

8) Observe the filter recharge kit (MaxVision Part Number 228-0002-0) as illustrated in Figure B-8. This kit comprises a pump spray cleaner and an aerosol spray containing replacement oil. The kit can also be purchased from many Auto Parts Stores.

**Figure B-8**

**Figure B-9**

9) It is recommended that you first tap the filter element on the work surface to dislodge any large embedded dirt particles, and then gently brush it with a soft bristle brush. Next, spray the cleaner onto both sides of the filter element (Figure B-9), leave for ten minutes, and then rinse the element using a low-pressure water source (tap water is OK).

**Note:** Always apply the water from the "clean" side of the filter element.

**Note:** The use of other cleaning materials (including high-pressure air) may damage and/or reduce the effectiveness of the filter element.

10) Shake off any excess water and then let the filter element dry naturally.

11) Apply replacement oil on the "dirty" side of the filter element as illustrated in Figure B-10. Note that the cotton in the filter element will absorb and distribute the oil into an even film; thus, it is important to use only a single pass for each area of the filter and to not over-spray the filter.

**Note:** The filter oil is a compound of mineral and animal oil blended with special polymers to form a very efficient barrier. Red dye is added to show just where you have applied the oil (this red color will eventually fade, but the oil will remain and filter the air).

**Figure B-10**

**Figure B-11**

12) Let the filter stand for 20 minutes and then touch-up any spots that do not visibly show the red dye contained in the oil.

13) Bring together the elements forming the filter assembly as illustrated in Figure B-11.Gently return the front air intake grill to its closed position.

# Resetting the Motherboard BIOS

In the event that your motherboard BIOS is corrupted or lost completely (this could be caused by failure of the lithium battery, electrostatic discharge, a major power surge, or user error), you may reset the BIOS as follows:

1) Power the system down completely (a simple **Start > Turn Off Computer > Restart** command is typically NOT recommended or sufficient) and then initiate the power-up sequence as discussed in Chapter 1.

2) Due to extensive system initialization and verification checks, the BIOS boot-up process can take a significant amount of time, especially in the case of systems with large amounts of memory. In the case of a system containing 12 GB of RAM, for example, it can take 60 seconds before all three LEDs above the numerical keypad on the keyboard flash. This is your cue to enter the BIOS setup utility, which you achieve by pressing the <F2> key on the keyboard. Note that the system may not immediately respond to your pressing this key, which may be buffered until higher priority initialization tasks have been completed. Once the system does respond to this key, you will be presented with the **System Overview** screen of the **BIOS Setup** utility as shown in Figure B-13.

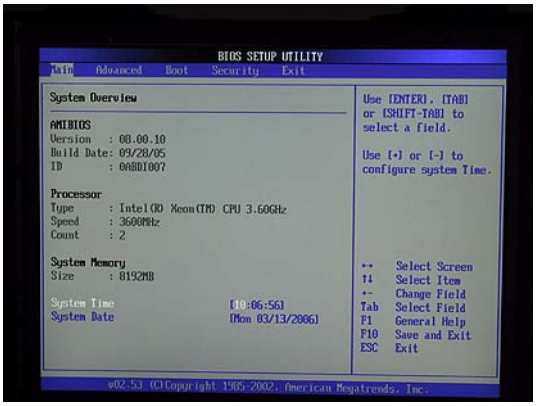



**Figure B-12**

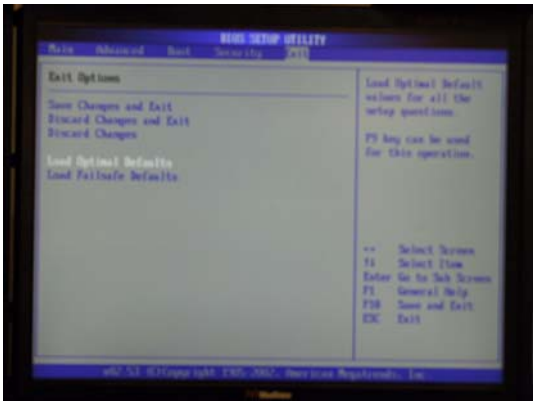



**Figure B-13**

3) Use the left/right arrow keys to select the **Exit** tab, and then use the up/down arrow keys to highlight the **Load Optimal Defaults** item (Figure B-13).

4) Press the <Enter> key to select this item. You will be presented with a confirmation screen as shown in Figure B-14.

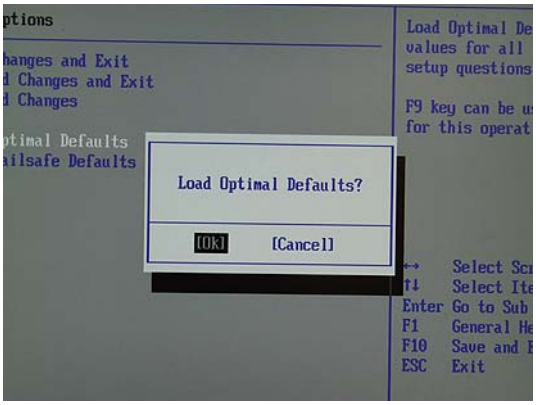



**Figure B-14**

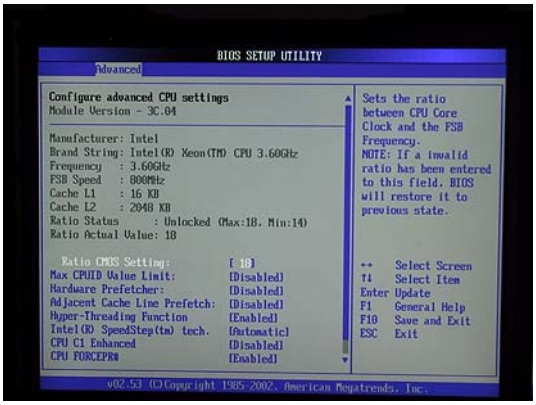

BIOS SETUP UTILITY
Advanced
Configure advanced CPU settings
Module Version - 3C.04
Manufacturer: Intel
Brand String: Intel(R) Xeon(TM) CPU 3.60GHz
Frequency : 3.60GHz
FSB Speed : 800MHz
Cache L1 : 16 KB
Cache L2 : 2048 KB
Ratio Status : Unlocked (Max:18, Min:14)
Ratio Actual Value: 18
Ratio CMOS Setting: [ 18]
Max CPUID Value Limit: [Disabled]
Hardware Prefetcher: [Disabled]
Adjacent Cache Line Prefetch: [Disabled]
Hyper-Threading Function [Enabled]
Intel(R) SpeedStep(tm) tech. [Automatic]
CPU C1 Enhanced [Disabled]
CPU FORCEPR# [Enabled]
Sets the ratio between CPU Core Clock and the FSB Frequency.
NOTE: If a invalid ratio has been entered to this field, BIOS will restore it to previous state.
↔ Select Screen
↑↓ Select Item
Enter Update
F1 General Help
F10 Save and Exit
ESC Exit
v02.53 (C)Copyright 1985-2002, American Megatrends, Inc.

**Figure B-15**

5) Use the arrow keys to select the **OK** option, and then press the <Enter> key to select this item and to load the optimal defaults for your system.

6) Press the <F10> key to save and exit the BIOS. This will cause a confirmation form to appear on the screen. Use the arrow keys to highlight the **OK** option, and then press the <Enter> key to save your changes to CMOS and exit the BIOS Setup utility.

# Replacing the Lithium Battery

A Lithium Ion battery is included with the system motherboard. This battery is used for the Real Time Clock circuit. The expected lifetime of the battery is approximately 5 years.

There is a danger of explosion if this battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the motherboard manufacturer. Dispose of used batteries according to the manufacturer's instructions.

In order to replace the lithium battery you should perform the following steps:

1) Shut down the system and unplug the power cord.
2) Remove the main display assembly and then access the inner chassis as discussed in Chapter 3.
3) Remove and replace the lithium battery according to the manufacturer's instructions.
4) Close up the system.

# Appendix C: Screws and Required Tools

## Screws

The various screws used in a MaxCube system are illustrated approximately full size as shown in Figure C-1

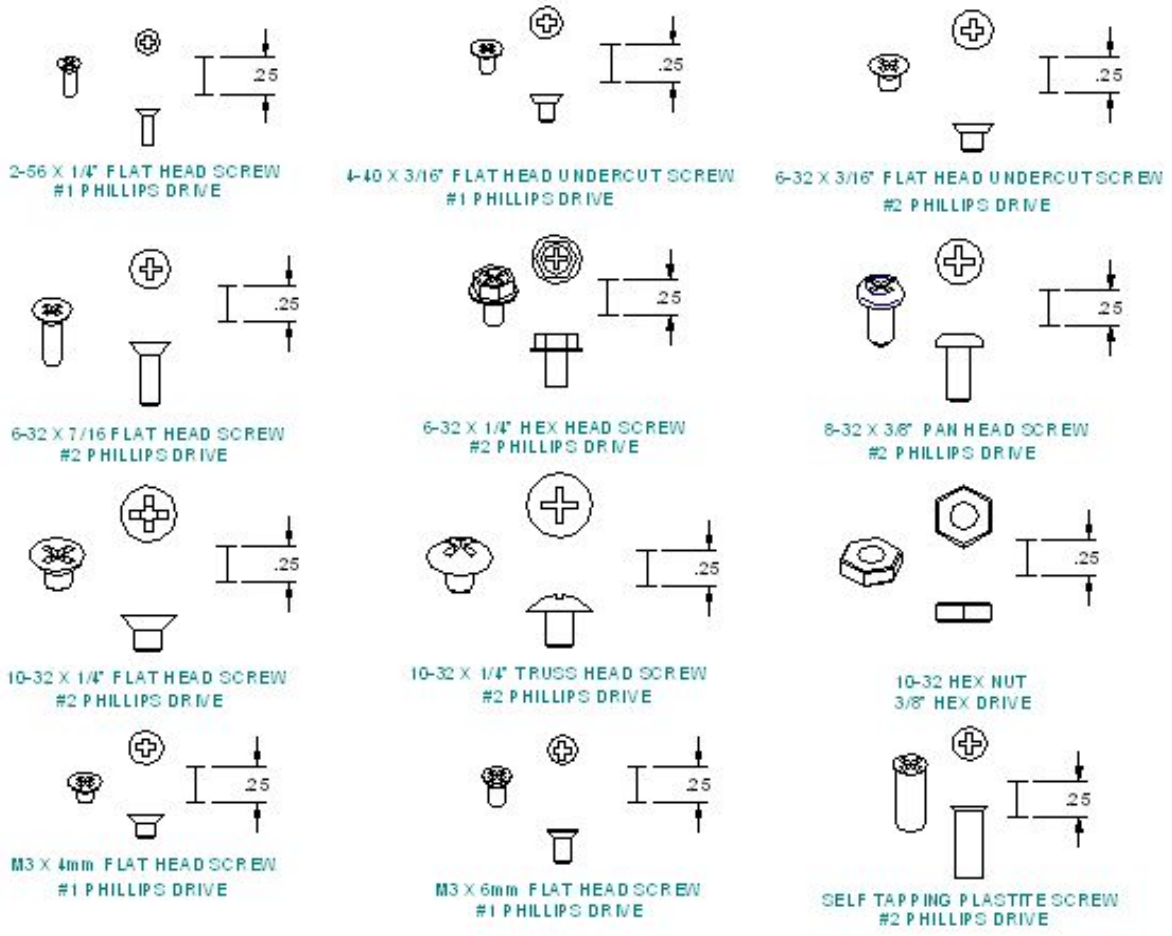

.25
2-56 X 1/4" FLAT HEAD SCREW
#1 PHILLIPS DRIVE
4-40 X 3/16" FLAT HEAD UNDERCUT SCREW
#1 PHILLIPS DRIVE
6-32 X 3/16" FLAT HEAD UNDERCUT SCREW
#2 PHILLIPS DRIVE
6-32 X 7/16 FLAT HEAD SCREW
#2 PHILLIPS DRIVE
6-32 X 1/4" HEX HEAD SCREW
#2 PHILLIPS DRIVE
8-32 X 3/8" PAN HEAD SCREW
#2 PHILLIPS DRIVE
10-32 X 1/4" FLAT HEAD SCREW
#2 PHILLIPS DRIVE
10-32 X 1/4" TRUSS HEAD SCREW
#2 PHILLIPS DRIVE
10-32 HEX NUT
3/8" HEX DRIVE
M3 X 4mm FLAT HEAD SCREW
#1 PHILLIPS DRIVE
M3 X 6mm FLAT HEAD SCREW
#1 PHILLIPS DRIVE
SELF TAPPING PLASTITE SCREW
#2 PHILLIPS DRIVE

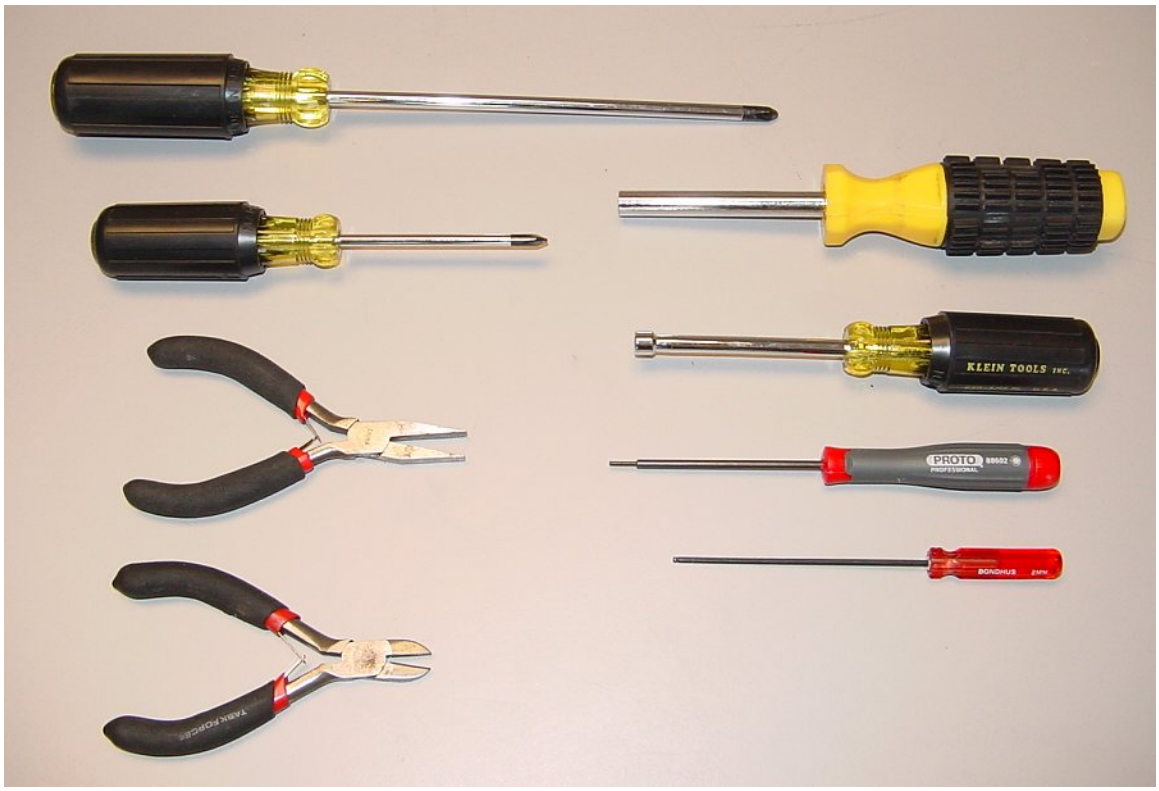
**Figure C-1. Screws used in MaxCube systems**

# Required Tools

**Note:** It is extremely important that you use only high-quality tools so as to avoid any slippage and stripping of screw heads and threads.

**Note:** It is highly recommended that you use magnetized screwdrivers so as to prevent screws from dropping inside the case and/or aiding in retrieving them if they do drop inside the case. (If your screwdriver isn't already magnetized, you can make it so by repeatedly "stroking" the blade with a permanent magnet. Using a high quality universal screwdriver with replaceable Phillips #1 and #2 bits is a good idea to ensure that your bits are always in excellent condition.

Most of the module replacement and upgrade procedures discussed in this chapter can be performed using only a pair of #1 (small tip) and #2 (regular tip) Phillips screwdrivers.




For some procedures, however, needle-nose pliers will be of use, and you may have to cut cable ties on occasion.

# Appendix D: Contacting MaxVision Support (RMA and Serial Numbers)

## Repairing/Replacing Products/Accessories

MaxVision will repair or replace products/accessories due to defects in material or workmanship, or any failure of the hardware system to conform to written specifications. Warranty repairs will be performed at MaxVision's service center. Any replacement parts/products shall be new or refurbished. Any repaired or replaced product will not extend the original warranty term of the product. Additionally, this warranty period will not be extended as a result of the purchase of any additional parts/products from MaxVision Corporation.

## Contacting Technical Support and RMA Numbers

During the warranty period, MaxVision will provide technical support for hardware diagnosis via email (maxvision.support@maxvision.com or support@maxvision.com ) or the technical support and customer service hotline (800-533-5805). If MaxVision's technical support determines that the product is defective, MaxVision will issue a *Return Material Authorization (RMA)* number to the customer. The customer is required to ship the product referencing the RMA number on the outside of the original (or equivalent) packaging with a copy of MaxVision's RMA form if provided. The return shipment must be sent insured and prepaid to:

**MaxVision, Rugged Portable Computers LLC**
**495 Production Avenue**
**Madison, AL 35758**
**USA**

**Attn: Support**

MaxVision will ship the repaired or replaced product to the customer with freight prepaid if the customer's address is within United Stated of America (excluding Alaska, Hawaii, Puerto Rico and U.S. possessions). Shipments to other locations will be shipped at the customers expense. MaxVision must receive notice of all events before the warranty period expires. NOTE: MaxVision will not be responsible for data on the hard-disk drive. Before you ship the product(s) to MaxVision, please back up your data from the hard-disk drive(s)or any other storage device(s) in the product(s).